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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,026	10/12/2001	Clark E. Robison	2000-IP-000882 U1 USA	3733

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EXAMINER

SMITH, MATTHEW J

ART UNIT PAPER NUMBER

3672

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,026

Applicant(s)

ROBISON ET AL.

Examiner

Matthew J. Smith

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-41 and 43-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41, 43-46 and 51-64 is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-40, and 47-50 is/are rejected. 51, 52, 54, 56, 59, 60, 63, and 64
- 7) ☒ Claim(s) _____ is/are objected to. 53 55 57 58 61 and 62
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9 and 12. 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7, 9, 11, 12, 15-17, 19-21, 25, 27-29, 31, 33, 34, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teplitz (3026936) in view of Hough et al. (3175613).

Teplitz discloses a method of perforating a cased wellbore having cement to establish fluid communication comprising perforating with a mechanical perforator (col. 3, line 21); igniting a propellant to perforate the cement (col. 4, lines 21-27); acid stimulation (col. 5, lines 4-6); perforating into the cement (col. 3, lines 50-53); and perforating with a propellant stick (col. 4, lines 31-32). This reference does not disclose a high-energy fluid stream. Hough et al. disclose using a high-energy fluid stream, with abrasive particles, to fracture cement and the formation. The fluid stream is completely saturated with the abrasive fluid for maximum rate of penetration and total penetration. The effect of the fluid stream is to create a series of shock waves that induce a spalling attack on the rock present at the liquid boundary at the earth formation that is effective to break up any fluid bank that attempts to form at the surface of the formation in the perforation.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made have modified Teplitz's perforator apparatus and method of perforation to include a high energy fluid stream in view of Hough et al. in order to create narrower and pointed perforations (col. 4, lines 12-15) for better permeability.

Claims 4, 5, 13, 22, 23, 35 and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teplitz in view of Hough et al. as applied to claims 1, 12, 19, and 31, respectively above, and further in view of Graham (1162601).

The combination discloses cementing casing, perforating with a mechanical perforator, and igniting a propellant to create a high-energy fluid stream. The combination does not disclose a toothed perforator. Graham shows a toothed perforator 10 used in a cased borehole to create hole in a more direct and positive perforating movement for completing a well.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the Graham toothed perforator in the combined device and method since any mechanical perforator is acceptable (Teplitz, col. 3, line 17).

Claims 6, 24, 36, 51, 52, 54, 56-59, 60, 63, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teplitz in view of Hough et al. as applied to claims 1, 19, and 31, respectively above, and further in view of Kafader (462800). The combination discloses cementing casing, perforating with a mechanical perforator into the cement, and igniting a propellant to create a high-energy fluid stream. The combination does not disclose a needle type perforator. Kafader presents a needle type perforator A for punching circles of holes in a cased borehole to create perforations for completing a well.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the Kafader needle perforator in the combined device and method since any mechanical perforator is acceptable (Teplitz, col. 3, line 17).

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Claims 8, 14, 26, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teplitz in view of Hough et al. as applied to claims 1, 19, and 31, respectively above, and further in view of Snider et al. (6082450). The combination discloses cementing casing, perforating with a mechanical perforator, and igniting a propellant to create a high-energy fluid stream. The combination does not disclose a sleeve type propellant. Snider et al. reveal a sleeve type propellant 40 used in a cased borehole to create holes for completing a well. This reference relates to an apparatus and method for stimulating a subterranean formation(s), and more particularly, to such an apparatus and method wherein a propellant is employed to stimulate the subterranean formation(s) and/or to enhance the effectiveness of perforations which provide communication between a well and the formation(s).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the Snider et al. sleeve type propellant 40 in the combined device and method since any propellant is acceptable (Teplitz, col. 4, lines 21-27).

Claims 18, 30, 32, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teplitz in view of Hough et al. as applied to claims 1, 19, and 31, respectively above, and further in view of Forsyth et al. (6029748). The combination discloses cementing casing, perforating with a mechanical perforator into the cement, igniting a propellant to create a high-energy fluid stream, and acid stimulation. The combination does not disclose expanding casing. Forsyth et al display an apparatus and method that allow for downhole expansion of long strings of rounded tubulars, using a technique that preferably expands the tubular from the top to the bottom.

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It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use an expandable casing in the combined operation, as displayed by Forsyth et al., in order to make the casing conform to the borehole (Forsyth et al., col. 1, lines 18-21).

Allowable Subject Matter

Claims 41, 43-46, and ~~51-64~~ are allowed.

MS
9 March
53 55 57, 58, 61, 62

Response to Arguments

Applicants' arguments with respect to claims 1, 19, 31 and 47 have been considered but are moot in view of the new ground(s) of rejection.

The argument, on page 13, with respect to Teplitz not disclosing the type of propellant currently in use is not persuasive. The examiner contends Teplitz need not anticipate all future propellants for the disclosure to be pertinent. One of ordinary skill would be aware of the current technology and would apply this technology in a manner consistent with the suggestion in Teplitz to perforate casing and fracture the cement and formation.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pahmiyer (6494261) discusses a propellant to perforate a formation.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Smith whose telephone number is 703-305-5135. The examiner can normally be reached on M-F, 9-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 703-308-2151. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-1113.


David Bagnell
Supervisory Patent Examiner
Art Unit 3672

MJS *MJS*
6 September 2003